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ABSTRACT

This study examined whether 540 teacher candidates who failed to or who successfully made the transition into teaching 7 years after commencement of teacher preparation differed in anxiety about teaching, attitude toward a teaching career, and self-perceived effectiveness as future teachers. At the beginning of teacher preparation in 1985, participants reported various personal characteristics, including degree of assurance about becoming teachers, gender, planned level of instruction, and time at which they first decided to become teachers. They completed the Teaching Anxiety Scale, the Attitude Toward Teaching as a Career Scale, and the Self-Perceived Effectiveness as a Future Teacher Scale. After 7 years, researchers contacted them again to determine whether they had become certified as teachers, whether they were presently teaching, and the extent of their teaching experience. Results revealed differences between candidates who graduated but did not become certified as teachers, who became certified as teachers but did not teach, who became part-time teachers, and who became full-time teachers. There were relationships between candidates' major, gender, initial degree of assurance about becoming teachers, extent of successful transition from student to teacher, and the three affective measures. Findings support the hypothesis that attrition during teacher preparation and the early years of teaching does not necessarily reduce the quality of the affective characteristics of those remaining in teaching. Candidates teaching 7 years after commencement of teacher preparation possessed theoretically more desirable affective traits than did nonteaching candidates. (Contains 1 figure, 5 tables, and 42 references.) (SM)

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Running Head: RELATIONSHIPS TEACHER ATTRITION

A Longitudinal Study of Relationships Between Attitude toward Teaching, Anxiety about Teaching, Self-Perceived Effectiveness, and Attrition from Teaching

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Abstract

This longitudinal study was designed to ascertain if those teacher candidates (N=540) having failed to or having made a more or less successful transition into the teaching field seven years after the commencement of teacher preparation differed in anxiety about teaching, attitude toward teaching as a career, and self-perceived effectiveness as a future teacher upon commencement of teacher preparation. MANOVA procedures completed on the set of three affective dependent variables revealed differences between those candidates who graduated but did not become certified as teachers, who became certified as teachers but did not teach, who became part-time teachers, and those who became full-time teachers. Relationships and a statistical interaction also were identified between the candidates' major, gender, initial degree of assurance about becoming teachers, extent of successful transition from students to teachers and the three affective measures. The findings generally supported the hypothesis that attrition during teacher preparation and the early years of teaching does not necessarily reduce the quality of the affective characteristics of those remaining in the teaching profession as might be assumed by some earlier research findings. To the contrary, the candidates teaching seven years after commencement of teacher preparation were found to possess theoretically more desirable affective traits at least as assessed at the time of the commencement of teacher preparation than had their nonteaching cohorts.

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A Longitudinal Study of Relationships Between Attitude toward Teaching, Anxiety about Teaching, Self-Perceived Effectiveness, and Attrition from Teaching

The educational accountability reform efforts, such as pupil and teacher competency testing and efforts to attract more capable individuals to teaching, have focused primarily upon teacher candidates' cognitive competencies. Educational theorists believe, however, that affective attributes of teachers also are important to teaching success, and limited research findings indicate that affective traits of teachers indeed are related to classroom teaching behaviors and to learner outcomes (e.g., Brookhart & Freeman, 1992; Parkay, Greenwood, Olejnik, & Proller, 1988; Kagan, 1992; Lawrence, 1979; Pajares, 1992; Guyton & DeMoulin, 1989). Furthermore, results of the research of Byler and Byler (1984) suggest that positive changes in teachers' affective development are influenced by teacher preparation experiences such as the extent of prospective teachers' early field experience, the expectations of fellow student teachers in assigned school settings, the degree to which cooperating teachers accept student teachers as fellow professionals, and the cooperating teachers' level of morale. Relatedly, McCaulley and Natter (1974) found that individuals with different Myers-Briggs personality types are attracted to different grade levels and subject areas of teaching. And, Villeme and Hall (1980) identified relationships between prospective teachers' attitude toward teaching and their gender, anticipated teaching grade level, and selected teaching major.

Additionally, research indicates that teachers' affective nature is related to how they perceive the bridge between various preservice experiences in teacher development (Conle, 1996) and the way they teach and the way they prefer to teach (Lawrence (1979). For example, research has revealed relationships between teachers' locus of control orientation and teaching behavior and pupils' achievement (Lefcourt, 1982). Harpin (1980) and Harpin and Sandler (1979) reported a relationship between teachers' locus of control and the nature of their classroom control. DeNovellis and Lawrence (1983) identified a relationship between teachers' Myers-Briggs personality type and the nature of their classroom control. And, Guyton and DeMoulin (1989) reported that effective and ineffective inservice teachers differed in personality but not in age, years of teaching experience, gender, race, and academic degrees earned. They described the more effective teachers as being more self-reliant, independent, dominant, assertive, competitive, resourceful, cheerful, and more trusting and understanding of others but less respectful of school rules compared to their less effective cohorts.

Other investigations of teachers' affective attributes have identified relationships between teachers' behavior and their feelings of stress in conjunction with locus of control orientation (e.g., Parkay, Greenwood, Olejnik, & Proller, 1988; Sadowski, Blackwell, & Willard, 1986; McIntyre, 1984; Meadow, 1981). Teachers reporting low levels of stress and feelings of internal locus of control had fewer classroom discipline problems, fewer intrapersonal conflicts, and better relations with superiors, colleagues, and parents of their pupils than did their externally controlled colleagues with higher levels of stress. Relatedly, Ashton, Webb, and Doda (1983) reported that teachers with stronger feelings of self-efficacy and an internal locus of control accepted more personal responsibility for their pupils' success or failure. And, Murray and Staebler (1974) found that teachers with internal locus of control orientations had higher achieving pupils than their cohorts with external locus of control orientations.

Regarding the measurement of attitude as an affective trait of teachers in the present study, the situation specific Attitude Towards Teaching as a Career Scale was developed from the premises of need theory and the attitude-concept view of attitude structure. Merwin and DiVesta (1959) reported a test-retest coefficient of reliability of 0.79 and construct validity evidence in the form of a significant difference in the attitude between students seeking or not seeking a career as teachers for the measure. It is an 11-item scale which is answered on a strongly agree '1' to a strongly disagree '6' continuum with a score of 11 representing the least positive and 66 the most positive attitude. Attitudes on this scale are conceptualized as a function of the individual's belief value matrix and as evolving from perceptions that attitude objects block (negative) or facilitate (positive) need satisfaction. A teaching candidate, therefore, would have a positive attitude towards teaching as a career if he perceives

teaching as satisfying his underlying needs. Developmentally, teachers in preparation would be expected to report an increasingly more positive attitude toward teaching as their knowledge and skills develop. More recently this instrument has been shown to differentiate between teacher candidates persisting and not persisting through teacher preparation (Pigge & Marso, 1992).

Historically, prospective teachers' attitude toward teaching has been characterized by feeling positive about children, having less concern than other college students about future income levels, perceiving teaching as a good preparation for family life, and possessing a desire to help others. Research conducted during teacher preparation indicates that prospective teachers' attitudes tend to change from more formalized and rigid to more liberal and democratic perspectives during early preparation but with a return to the former less humanistic classroom management attitude during student teaching (Callahan, 1980; Hoy & Woolfolk, 1990; Lipka & Garlet, 1981). This change from and return to initial rigid attitudes has been noted even though the prospective teachers' overall positiveness of attitude toward teaching and children may become even more positive during student teaching (Sandgren & Schmidt, 1956), and Chester and Beaudin (1996) reported that school practices influence changes in teachers' self-efficacy beliefs and attitudes toward teaching during the first year of teaching. Some studies have measured attitudes as teacher candidates have progressed through teacher training and the initial teaching years but, seemingly, with the same findings of those studies limited to the period of teacher preparation. For example, Paschal and Treloar (1979) found that attitudes became more humanistic and liberal in orientation during teacher training, but by the third year of teaching, attitudes had returned to essentially the same as at the outset of teacher training.

Regarding the measurement of anxiety as an affective trait of teachers in the present study, the Teaching Anxiety Scale was developed by Parsons (1973) with the implicit assumption that teaching anxiety will decrease as knowledge and skills develop during teacher preparation. It is a situation specific scale comprised of 29 items with a response continuum for each item from never '1' to always '5' with higher scores indicating more anxiety about teaching. The author reported a test-retest coefficient of stability of 0.95 and alpha internal consistency coefficients within a range of 0.87 to 0.94 for the scale. He also reports concurrent validity evidence in the form of correlations between the scale and several other anxiety instruments (coefficients from 0.25 to 0.62) and in the form of correlations between preservice teacher interns' scores on the scale and their teacher supervisors' ratings of the students' anxiety about teaching (coefficients from 0.24 to 0.54) for the instrument.

A number of studies have reported relationships between teachers' anxiety levels and teacher or pupil behavior. For example, Harootunian and Koon (1970) found a negative correlation between teacher anxiety and verbal support of pupils; Clark (1973) identified a negative relationship between teacher anxiety level and pupil grading practices; Doyal and Forsyth (1983) found teachers' anxiety to be positively related to pupil anxiety but negatively to their rapport and acceptance by their pupils; Osborne (1973) reported a negative correlation between teacher anxiety and pupil academic performance; and Parkay, Greenwood, Olejkni and Proller (1988) identified a negative correlation between teacher anxiety and classroom discipline problems and relationships with colleagues, administration and parents. More specific to the purpose of the present study, some studies have found relationships between teacher anxiety and both teacher burnout (Byrne, 1994) and teacher attrition (Crame, 1974; Krasno, 1972).

Related to teacher attrition, the existing research literature focuses almost exclusively upon ability factors rather than affective characteristics of teachers entering and leaving the profession. One current area of linkage between teacher affect and attrition exists in the research of teacher commitment and related teacher attitudes and anxieties. For example, Riehl and Sipple (1996) noted that teacher commitment is associated with attrition from teaching and provided evidence that commitment is influenced by school climate. Early research literature suggests that attrition from teaching invariably reduces the academic quality of those remaining in the teaching pool, but somewhat more recent longitudinal studies have indicated that capable individuals once attracted to the teaching profession are as likely to persist through teacher training (Marso & Pigge, 1991; Pigge &

Marso, 1992) and through their early teaching years (Heyns, 1988) as their less capable cohorts. Also contrary to earlier research suggesting that education has been much less effective than other fields in attracting academically competent individuals to the profession (e.g., Shields & Daniel, 1982), more recent research of the academic ability of those actually entering the teaching field, rather than comparing the ability of high school seniors aspiring to become teachers with those high school seniors aspiring to enter other fields, has revealed much more favorable comparisons between the abilities of those individuals actually becoming teachers and their cohorts actually entering other fields (Book, Freeman, & Brousseau, 1985; Nelson, 1985). It appears that less able high school students, many of whom never complete college, are more likely to indicate teaching as a potential field than other fields and that some more capable high school students who initially express interest in other fields actually become teachers. Nelson (1985), for example, reported that fewer than 25 percent of the actual teachers participating in the National Longitudinal Survey had planned to be education majors as seniors in high school. Also Lyson and Falk (1984) found that 75 percent of their sample of high school seniors who had planned to teach were not teaching seven years after their high school graduation.

In summation, some empirical evidence exists that the affective attributes of teacher candidates are important as they may influence future teacher and pupil behaviors, and more limited research suggests that affective characteristics of teachers may be related to attrition from the teaching profession. Similarly, some evidence suggests that findings from existing cross-sectional studies of teacher characteristics and attrition may be inaccurate due to inherent sampling limitations. The purpose of the present longitudinal study was to test the general hypothesis that teacher attrition in early teaching years does not necessarily reduce the affective quality of the remaining teaching pool. More specifically, this study was designed to answer the following types of questions: 1) Are the more affectively desirable teacher candidates, as indicated by low levels of anxiety about teaching, highly positive attitudes toward teaching as a career, and high levels of self-perceived effectiveness as future teachers, more likely than their less affectively desirable cohorts to become certified as teachers? 2) Are the teacher candidates with the more theoretically desirable affective scores more likely to become full-time teachers instead of part-time teachers as compared to their cohorts with less desirable affective traits? 3) Are characteristics of teacher candidates, such as gender, planned level of instruction, time at which they made the decision to teach, and the extent of their initial assurance about becoming a teacher, and the degree of their success in making the transition from students to teachers associated with their affective characteristics?

Methods and Procedures

The subjects for the present study consisted of a longitudinal sample of 540 teacher candidates from whom data were gathered at the commencement of teacher preparation and again seven years after their commencement of preparation. Upon the beginning of teacher preparation the teacher candidates reported various personal characteristics such as their degree of assurance about becoming a teacher, gender, planned level of instruction, the time at which they first decided to become teachers, and they completed the Teaching Anxiety Scale, the Attitude Toward Teaching as a Career Scale, and the self-perceived effectiveness as a future teacher scale. Finally, seven years after the commencement of teacher preparation, individual, parent, alumnae office, and State Department of Education contacts were made to determine whether the candidates had become certified as teachers, whether or not they were presently teaching, and the extent of their teaching experience, if any, since graduation.

This sample of teacher candidates consisted of virtually all candidates beginning their teacher preparation at a large midwestern teacher preparation institution during 1985. These candidates were predominately white (98%), female (81%), elementary (57%) and secondary (43%) majors, very certain or almost certain about teaching (88%), from families with teachers in the present or prior generation (60%), children of parent or parents not holding four-year college degrees (67%), from somewhat larger families (46% with three or more siblings), second or later birth order (66%), with some or considerable prior teaching-like experiences (73%), very confident about becoming unusually good to exceptionally effective future teachers (78%), from rural (33%) or suburban (54%) high schools of moderate to small

size (61% with high school graduating classes of 300 or less), and most had first decided to teach when in their elementary school years (24%) or when in their high school years (50%) rather than after high school graduation. Those candidates who were teaching seven years after the commencement of their teacher preparation were found to have sought employment in schools similar to those from which they had graduated.

Univariate two-way ANOVAs were used to ferret out probable causes of initial significant F values derived from two-way MANOVAs related to testing whether seven years after the commencement of teacher preparation, part-time teachers (e.g., presently part-time, substitute or temporary full-time teachers with less than two years of full-time teaching experience), full-time teachers (currently full-time with more than two years of full-time teaching experience), candidates who graduated but had not become certified as teaches, and candidates who had been certified as teachers but did not teach had differed in anxiety about teaching, attitude toward teaching, and self-perceived effectiveness as a future teacher upon entering teacher preparation; whether the personal characteristics of the candidates such as gender, planned level of instruction, assurance about becoming teachers, and when they first decided to teach, were related to the attitude, anxiety, and effectiveness scores among the candidate groups with varied levels of success in their transition from students to teachers; and whether any statistical interactions existed between the candidates' extent of transition from students to teachers and the aforementioned candidate characteristics for the three affective scores. And, Tukey/Kramer comparison procedures (alpha = .05) were employed to reveal pair-wise mean differences.

The anxiety, attitude, and effectiveness scores were used as the set of dependent variables in all analyses. The psychometric qualities of the anxiety and attitude measures were presented in the previous section. The researcher-constructed self-perceived effectiveness as a future teacher measure consists of a single item responded to on an an eight-point continuum from not effective at all "0" to truly exceptional "7" in fulfilling the functions of a teacher. The classification of the candidates' extent of success in making the transition from student to teaching (not certified as teachers, certified but not teaching, part-time teachers, and full-time teachers) seven years after the commencement of teacher preparation was the main independent variable (column classification), and the classifications of the candidates by gender, degree of assurance about becoming a teacher at the commencement of teacher preparation (very certain, certain, and uncertain), level of instruction (elementary and secondary), and time when the decision to teach was made (during the elementary grades, during high school years, and after high school graduation) were used as the second independent variables (row classifications) in the two-way MANOVA and ANOVA procedures.

Results

The two-way MANOVA procedure revealed significant Wilks' Lambda F-value differences in the set of three dependent variables for the extent of successful transition from students to teachers (column) main effect and for four subject (row) classifications (see the top of Tables 1-4). The transition main effect p values varied from .0448 to .0001. Row main effects revealing significant mean differences were the teachers' initial assurance about their decision to become teachers ($F = 23.40$, $p = .0001$), gender ($F = 4.29$, $p = .0053$), the instructional level of the candidates ($F = 4.04$, $p = .0074$), and the time at which the candidates first decided to become teachers ($F = 2.81$, $p = .0102$) classifications. These MANOVA procedures also revealed a significant extent of successful transition from student to teaching x initial degree of assurance about teaching interaction ($F = 1.80$, $p = .0207$).

Extent of Successful Transition to Teaching

The univariate two-way ANOVA procedures with the degree of initial assurance about teaching row main effect classification (see Table 1) revealed that the not certified candidates had the lowest attitude ($F = 3.64$, $p = .0128$), the highest anxiety mean ($F = 4.81$, $p = .0026$), and lowest effectiveness scores of the four degree of transition groups. However, the effectiveness as a future

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teacher means for the four extent of transition groups were not statistically different from one another ($F = 1.69$, $p = .1678$).

Insert Table 1 about here

The Tukey/Kramer mean-pair comparison procedures indicated that the not certified candidates reported less positive attitudes toward teaching as a career than the other three groups of candidates and that the certified but not teaching group reported a less positive attitude than the part-time teacher group. Thus, collectively the two teaching groups had more positive attitudes toward teaching than the not certified group, and the part-time teachers had a more positive attitude than the not teaching group. The not certified group of teachers reported a higher level of anxiety about teaching than the part-time and full-time teachers but a level comparable to the certified but not teaching level. In general summary, the two not teaching groups, as entering teacher candidates, had reported a less positive attitude toward teaching and a higher level anxiety about teaching but no difference in self-perceived effectiveness as future teachers than had their two cohort groups who were teaching part-time or full-time seven years later. The Tukey/Kramer procedures revealed that the major differences found among the groups for these two measures resulted from the comparisons involving the not certified group of candidates.

The extent of transition from students to teachers main effect for the ratings of self-effectiveness as future teachers will not be further discussed in the presentation of findings as these results are essentially consistent for the various ANOVA procedures as would be expected. It can be noted that the effectiveness as future teachers mean differences among the transition groups reached significance in two of the four ANOVA analyses (see Tables 3 and 4), but the Tukey/Kramer procedures revealed a difference among the group means for just one of the four ANOVA procedures (see Table 3). This latter set of comparisons indicated that the not certified candidates rated their effectiveness as future teachers somewhat lower than the other three groups upon commencement of teacher preparation.

Assurance About Teaching

The assurance about the decision to become a teacher main effect was significant for the attitude ($F = 45.05$, $p = .0001$), anxiety ($F = 39.80$, $p = .0001$), and the effectiveness scores ($F = 10.07$, $p = .0001$). Additionally, a significant extent of transition x degree of assurance interaction was identified for the attitude scores ($F = 2.81$, $p = .0106$). The very certain teacher candidates reported a more positive attitude toward teaching scores than did the almost certain and uncertain candidates; and in turn the almost certain candidates reported more positive attitudes than did the uncertain candidates. This same pattern of differences was revealed for the effectiveness scores. Just the opposite pattern was identified for anxiety scores with highest level of anxiety reported for the uncertain candidates followed by the almost certain who in turn reported higher levels of anxiety than the very certain candidates. In other words, the Tukey/Kramer comparisons revealed that each mean differed significantly from each other mean for the assurance level groupings of the candidates for the attitude, anxiety, and effectiveness scores as shown on Table 1.

The presence of the significant extent of transition x degree of assurance interaction for the attitude scores, however, indicates that this main effect should be interpreted only in light of the interaction. A graph of the extent of transition x degree of assurance about teaching interaction for the attitude means is shown in Figure 1. The teacher candidates who were uncertain about teaching upon the commencement of teacher preparation had relatively much less positive attitudes toward teaching as a career than their cohorts who were very certain and certain about teaching, and this difference was most pronounced for the certified not teaching group and was smallest for the not certified group.

This interaction suggests that both level of attitude toward teaching and degree of initial assurance about teaching should be considered to most accurately predict persistance in teaching.

Insert Figure 1 about here

Gender

The two-way ANOVA procedures reported in Table 2 indicate that the candidates' attitude toward teaching ($F = 7.14$, $p = .0078$) and self-perceived effectiveness as future teachers ($F = 5.63$, $p = .0181$) upon commencement of preparation differed when the teacher candidates were classified by gender. Neither the anxiety scores gender main effect nor the transition group x gender interactions for the three affective scores revealed significant differences. The male candidates reported less positive attitudes toward teaching ($\underline{M} = 48.84$) than did the female candidates ($\underline{M} = 51.44$); however, the males perceived themselves to be more effective future teachers than their female cohorts ($\underline{M} = 5.37$ and $\underline{M} = 5.17$, respectively).

Insert Table 2 about here

Instructional Levels

The two-way ANOVA procedures revealed statistically significant differences between the attitude scores ($F = 4.49$, $p = .0345$) for the instructional level main effect, and the anxiety mean differences closely approached significance ($F = 3.69$, $p = .0555$). The elementary major candidates reported more positive attitudes ($\underline{M} = 51.61$, $\underline{M} = 50.06$), but somewhat higher levels of anxiety ($\underline{M} = 71.60$, $\underline{M} = 70.18$) about teaching upon commencement of teacher preparation compared to the secondary majors. None of the instructional level x degree of transition interactions revealed significant differences (see Table 3).

Insert Table 3 about here

First Interest in Teaching

The two-way ANOVA procedures revealed statistically significant attitude toward teaching as a career means for the time at which the decision to teach was made main effect ($F = 6.90$, $p = .0011$). The Tukey/Kramer mean-pair comparisons indicated that the teacher candidates deciding to become teachers during the elementary ($\underline{M} = 52.42$) and high school years ($\underline{M} = 51.35$) reported more positive attitude scores than their cohorts who had decided to teach after their high school graduation ($\underline{M} = 48.94$). The time of the decision to teach factor revealed no significant differences between the self-perceived effectiveness and anxiety means, and none of the time of decision x transition group interactions for the three affective measures were significant as can be seen in Table 4.

Insert Table 4 about here

Cell Numbers, Means, and Standard Deviations

The two-way ANOVA cell means, standard deviations, and numbers of subjects for the various row and column classifications for the three dependent variables are presented in Table 5. The pattern of means and standard deviations over the various classifications of the teachers confirm the main effect differences as noted as well as the near absence of interaction effects within the various levels of teacher transition.

Insert Table 5 about here

Summary and Discussion

The longitudinal sample of 540 teacher candidates completed measures of anxiety about teaching, attitude toward teaching as a career, and effectiveness as future teachers upon commencement of teacher preparation, and seven years later the candidates were classified by extent of transition from students to teachers. The four extent of transition groups were comprised of candidates who were teaching full-time, teaching part-time, certified but not teaching, and those who graduated but did not obtain teacher certification. Two-way MANOVA and ANOVA procedures completed for the set of attitude, anxiety, and effectiveness scores identified statistically significant mean differences among the extent of transition groups for the anxiety and attitude about teaching scores. Two of the four two-way ANOVA procedures identified differences between the four transition groups for the self-perceived effectiveness as a teacher measure. Tukey/Kramer post-hoc, pair-wise mean comparisons revealed that upon commencement of teacher preparation the teacher candidates who did not become certified as teachers had reported less positive attitudes and higher levels of anxiety about teaching but approximately similar or somewhat lower levels of self-perceived effectiveness as future teachers compared to their cohorts who became part-time or full-time teachers. The not certified candidates also reported less positive attitudes about teaching than the certified but not teaching candidates who in turn reported less positive attitudes than did the part-time teachers.

When the candidates were classified as to their degree of assurance about becoming teachers (very certain, almost certain, and uncertain) upon commencement of teacher preparation mean differences for all three of the affective measures were found. Those candidates uncertain about teachers reported the least positive attitudes and highest levels of anxiety about teaching and rated themselves as less effective future teachers, whereas the very certain about teaching reported the most positive attitude and highest effectiveness scores and the lowest anxiety scores among the three certainty levels. The presence of a significant degree of assurance x transition group for the attitude measure was also identified indicating that the certified but not teaching candidates in particular differed in diversity of attitude toward teaching from their teaching and not certified cohorts.

The beginning female candidates reported a more positive attitude toward teaching but rated their effectiveness as future teachers lower than did the beginning male candidates, but male and female candidates did not differ in reported levels of anxiety about teaching. The secondary school majors reported less positive attitudes about teaching and somewhat lower levels of anxiety about teaching than the elementary school majors, but the elementary and secondary candidates did not differ in self-perceived effectiveness as future teachers. The teacher candidates deciding to teach after their high school years reported a less positive attitude about teaching but similar levels of anxiety and effectiveness levels compared to the candidates deciding to teach during their K-12 school years.

In summation, the candidates who were very certain about teaching reported more desirable affective traits than those almost certain about teaching, and they in turn expressed more desirable affective traits than the uncertain candidates. The female, elementary majors and the candidates deciding to become teachers in their K-12 grade years reported more positive attitudes toward teaching

upon commencement of teacher preparation than their male and secondary major cohorts and those candidates who decided to teach after high school graduation, but they did not differ from their cohorts in expressed levels of anxiety about teaching. And the male candidates rated their future effectiveness as teachers higher than the female candidates.

The findings of the present study supported the main hypothesis for the study that attrition among teacher candidates upon graduation and during the early teaching years does not reduce the affective quality of the remaining teacher pool. In fact, these findings suggest just the opposite. In the present longitudinal sample of teacher candidates, those candidates with the higher levels of anxiety about and the less positive attitudes toward teaching, and in some comparisons those candidates who rated their effectiveness as future teachers lower, did not become certified as teachers. Furthermore, candidates who became certified as teachers but who did not teach reported higher levels of anxiety about teaching, less positive attitudes toward teaching and lower effectiveness as future teacher scores although this difference between these two groups who were teaching did not reach statistical significance for all of the Tukey/Kramer post-hoc pair-wise mean comparisons. The present findings, however, provided scant support for the hypothesis that selected teacher characteristics would be associated with their extent of transition from students to teachers. Just the attitude measure revealed a transition x teacher characteristic interaction. This interaction revealed greater diversity in attitude as well as less positive attitudes toward teaching within the candidates not becoming certified as teachers as compared to those certified as teachers.

The finding in the present study longitudinal study that teachers remaining in the profession possess more desirable affective traits than their cohorts leaving the profession adds a somewhat positive note to concerns about teacher attrition. These findings, along with those from other longitudinal studies (e.g., Heyns, 1988; Nelson, 1985; and Pigge & Marso, 1992), suggest that attrition from the teaching profession does not necessarily result in a reduction in the aptitudes and affective qualities of those continuing to teach.

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Table 1

Univariate and Multivariate F Values and Means for the Extent of Transition from Student to Teacher Groups and the Initial Degree of Assurance About Teaching Classification

A. MANOVA: Wilks' Lambda

Factors	df	F	p
Group	9,1277	1.93	.0448
Assurance	6,1052	23.40	.0001
Group X Assurance	18,1485	1.80	.0207

B. ANOVAs

	Extent of Transition Groups (Ns)							Degree of Assurance (Ns)						Group x Assurance		
Dependent Variable	Part-Time (115)	Full-Time (161)	Not Teach (149)	Not Cert. (114)	df	F	p	Very Certain (256)	Almost Certain (207)	Uncertain (76)	df	F	p	df	F	p
Attitude	52.23	51.88	50.48	48.71	3,527	3.64	.0128	52.92	50.70	44.64	2,527	45.05	.0001	6,527	2.81	.0106
	A*	AB	B	C				A	B	C						
Anxiety	69.01	70.74	71.04	73.83	3,527	4.81	.0026	66.98	73.53	77.66	2,527	39.80	.0001	6,527	1.07	.3819
	A	A	AB	B				A	B	C						
Effectiveness	5.33	5.26	5.21	5.04	3,527	1.69	.1678	5.41	5.15	4.74	2,527	10.07	.0001	6,527	1.67	.1258
	A	A	A	A				A	B	C						

* Similar letters indicate nonsignificant mean differences.

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Table 2

Univariate and Multivariate F Values and Means for the Extent of Transition from Student to Teacher Groups and the Gender Classification

A. MANOVA: Wilks' Lambda

Factors	df	F	p
Group	9,1290	2.16	.0227
Gender	3,530	4.29	.0053
Group X Gender	9,1290	0.40	.9364

B. ANOVAs

	Extent of Transition Groups (Ns)							Gender (Ns)					Group x Gender		
Dependent Variable	Part-Time (115)	Full-Time (161)	Not Teach (150)	Not Cert. (114)	df	F	p	Male (115)	Female (425)	df	F	p	df	F	p
Attitude	52.23	51.88	50.45	48.71	3,532	4.87	.0024	48.84	51.44	1,532	7.14	.0078	3,532	0.10	.9575
	A*	A	AB	B				A	B						
Anxiety	69.01	70.41	71.05	73.80	3,532	3.37	.0183	70.23	71.21	1,532	1.11	.2916	3,532	0.39	.7637
	A	A	AB	B				A	A						
Effectiveness	5.33	5.21	5.25	5.04	3,532	0.86	.4599	5.37	5.17	1,532	5.63	.0181	3,532	0.57	.6324
	A	A	A	A				A	B						

* Similar letters indicate nonsignificant mean differences.

Table 3

Univariate and Multivariate F Values and Means for the Extent of Successful Transition from Student to Teacher Groups and the Instructional Level Classifications

Classifications

A. MANOVA: Wilks' Lambda

Factors	df	F	p
Group	9,1226	3.96	.0001
Level	3,504	4.04	.0074
Group X Level	9,1226	0.55	.8368

B. ANOVAs

	Extent of Transition Groups (Ns)							Instructional Level (Ns)					Group x Level		
Dependent Variable	Part-Time (112)	Full-Time (153)	Not Teach (144)	Not Cert. (105)	df	F	p	Elem. (276)	Sec. (238)	df	F	p	df	F	p
Attitude	52.24	52.03	50.51	48.34	3,506	8.92	.0001	51.61	50.06	1,506	4.49	.0345	3,506	0.67	.5694
	A*	A	A	B				A	B						
Anxiety	68.96	70.61	70.66	73.93	3,506	4.50	.0040	71.60	70.18	1,506	3.69	.0555	3,506	0.13	.9394
	A	A	A	B				A	A						
Effectiveness	5.34	5.30	5.20	5.02	3,506	2.90	.0347	5.24	5.20	1,506	0.04	.8449	3,506	0.91	.4345
	A	A	A	B				A	A						

* Similar letters indicate nonsignificant mean differences.

Table 4

Univariate and Multivariate F Values and Means for the Extent of Successful Transition from Students to Teachers and the First Interest in Teaching Classifications

A. MANOVA: Wilks' Lambda

Factors	df	F	p
Group	9,1277	2.75	.0035
First Interest	6,1050	2.81	.0102
Group X Interest	18,1485	0.86	.6327

B. ANOVAs

	Extent of Transition Groups (Ns)							First Interest Teaching (Ns)						Group x Interest		
Dependent Variable	Part-Time (114)	Full-Time (161)	Not Teach (1509)	Not Cert. (114)	df	F	p	Elem. School (117)	High School (263)	Post High School (159)	df	F	p	df	F	p
Attitude	52.18	51.88	50.45	48.71	3,527	5.43	.0011	52.42	51.35	48.94	2,527	6.90	.0011	6,527	1.04	.3969
	A*	A	AB	B				A	A	B						
Anxiety	69.11	70.41	71.05	73.80	3,527	3.74	.0111	69.85	71.32	71.42	2,527	0.46	.6341	6,527	.78	.5845
	A	A	AB	B				A	A	A						
Effectiveness	5.32	5.25	5.21	5.04	3,527	2.75	.0421	5.32	5.23	5.16	2,527	0.82	.4430	6,527	1.17	.3231
	A	A	A	A				A	A	A						

* Similar letters indicate nonsignificant mean differences.

Table 5

Means and Standard Deviations for the Cells Formed from the Degree of Transition to Teaching and Gender, Instructional Level, Degree of Assurance, and First Interest Classifications

	Part-time (Ns)				Full-Time (Ns)				Not Teaching (Ns)				Not Certified (Ns)			
Gender	Male (7)		Female (108)		Male (35)		Female (126)		Male (43)		Female (107)		Male (30)		Female (84)	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Attitude	50.9	5.7	52.3	5.1	50.0	7.5	52.4	6.3	49.0	5.4	51.0	6.7	46.7	5.6	49.4	6.5
Anxiety	67.9	8.2	69.1	10.5	68.2	9.4	71.0	11.0	69.6	10.4	71.6	10.6	74.0	13.5	73.7	9.5
Effectiveness	5.28	1.11	5.33	0.96	5.51	0.82	5.13	0.94	5.35	1.04	5.21	0.92	5.27	1.08	4.96	0.96
Major	Elem. (77)		Sec. (35)		Elem. (89)		Sec. (64)		Elem. (56)		Sec. (88)		Elem. (54)		Sec. (51)	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Attitude	52.4	5.4	52.0	4.3	52.3	6.6	51.6	6.7	52.0	7.1	49.6	5.9	49.0	5.5	47.7	6.8
Anxiety	69.7	10.9	67.4	8.4	71.4	10.9	69.5	10.5	71.2	11.1	70.3	10.3	75.1	9.4	72.6	12.1
Effectiveness	5.27	0.98	5.49	0.92	5.28	1.00	5.09	0.83	5.36	0.88	5.26	0.98	5.02	0.98	5.02	1.01

	Part-Time (Ns)						Full-Time (Ns)						Not Teaching (Ns)						Not Certified (Ns)					
Assurance	Very (65)		Almost (40)		Uncertain (10)		Very (90)		Almost (54)		Uncertain (17)		Very (69)		Almost (57)		Uncertain (23)		Very (32)		Almost (56)		Uncertain (26)	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Attitude	53.1	4.7	52.2	4.9	47.1	6.4	53.3	6.5	51.6	5.7	45.06	6.4	53.7	4.1	50.0	5.7	42.0	5.8	49.8	6.7	49.5	5.8	45.7	6.4
Anxiety	67.7	10.1	70.1	10.6	73.4	8.0	66.6	10.0	74.1	10.0	78.7	7.9	66.5	11.1	74.0	8.8	77.2	7.0	67.7	10.9	74.9	10.3	78.9	7.1
Effectiveness	5.40	0.97	5.28	0.96	5.10	0.99	5.43	0.85	5.04	0.97	4.59	0.79	5.57	0.87	5.07	0.98	4.83	0.89	5.03	1.09	5.25	0.96	4.62	0.85
Decide Teach	Elem. (27)		High (60)		After (27)		Elem. (40)		High (91)		After (30)		Elem. (31)		High (67)		After (22)		Elem. (19)		High (45)		After (50)	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Attitude	53.4	4.3	51.8	5.6	51.9	4.8	53.1	7.6	51.6	6.1	51.1	6.8	51.5	7.7	51.4	5.6	48.5	6.2	51.1	7.2	50.1	5.6	46.5	6.0
Anxiety	70.3	10.2	69.2	10.7	67.7	9.2	68.8	8.9	71.6	11.9	68.9	8.9	68.5	10.9	71.5	10.7	72.0	10.2	73.6	7.0	73.3	11.4	74.4	11.2
Effectiveness	5.41	1.04	5.18	0.98	5.56	0.80	5.38	0.90	5.10	0.97	5.33	0.80	5.45	0.81	5.19	0.94	5.21	1.05	4.84	1.01	5.18	0.98	5.00	1.01

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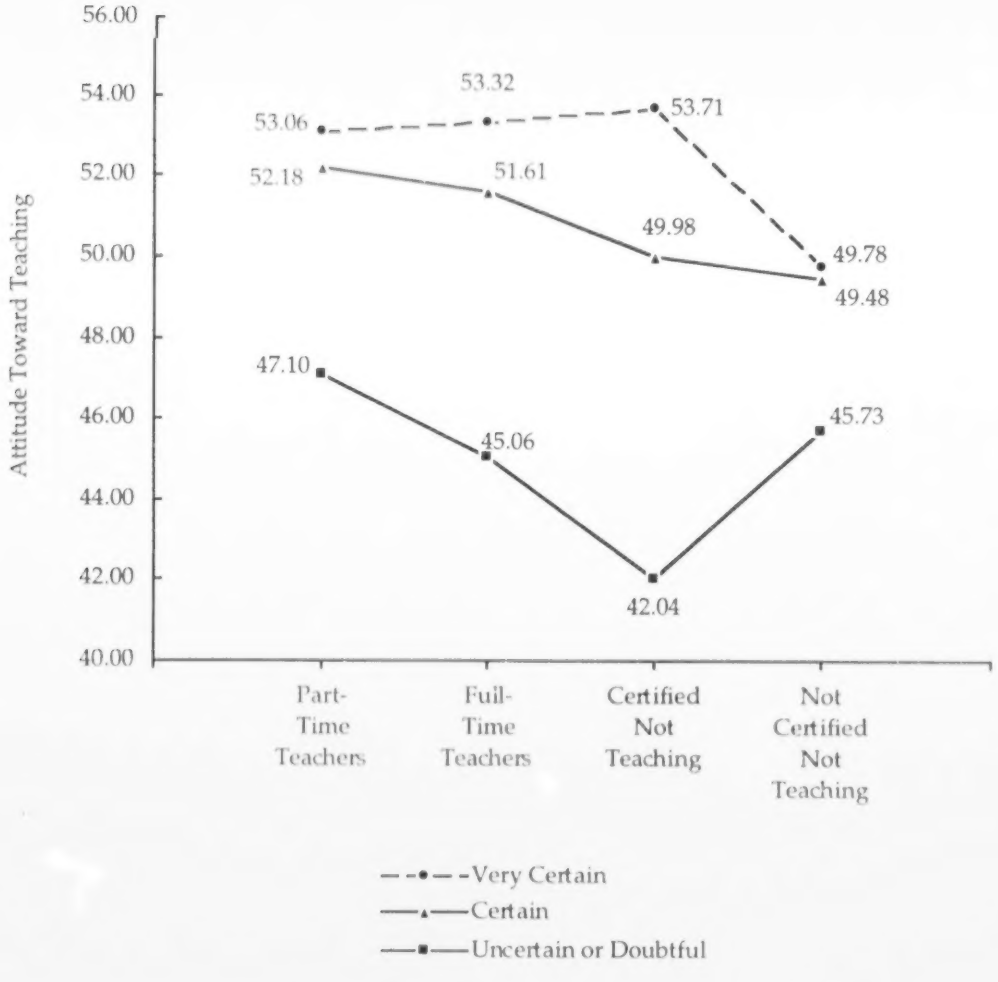
Figure 1

Extent of Transition to Teaching x Assurance About Teaching Interaction



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